

APPENDIX B

PROGRESS ENERGY: SPILL PREVENTION, CONTROL & COUNTERMEASURE PLAN



June 12, 2007

Mr. J. I. Palmer, Jr.
Regional Administrator
US EPA, Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Re: Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.
Information Submittal Under 40 CFR §112.4
Spill Prevention, Control, and Countermeasure Plan

Dear Mr. Palmer,

On April 15, 2007, a single discharge of approximately 16,000 U.S. gallons of mineral oil occurred from a transformer at a transmission substation facility located in Knightdale, North Carolina, owned and operated by Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. (PEC). The oil first entered a drainage ditch south of the substation which connects with an unnamed tributary flowing into Mark's Creek. In accordance with requirements found at 40 CFR § 112.4, PEC is submitting additional information regarding this discharge to US EPA Region 4. A complete copy of this information is also being provided to Mr. Charles Wakild, Raleigh Regional Supervisor, Surface Water Protection Section, Division of Water Quality, North Carolina Department of Environment & Natural Resources. In correspondence dated June 8, 2007, PEC, also responded to a request for information from US EPA Region 4, under Sections 308 and 311 of the Clean Water Act.

If you require any further information about this discharge, please contact Mr. Donald Ennis at (919) 546-7323.

Sincerely,

Ms. Caren Anders
Vice President of Transmission Operations & Planning
Progress Energy Carolinas, Inc.

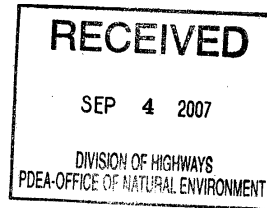
Enclosure

CA/rjb

c: Mel Rechtman, USEPA Region 4
RCRA and OPA Enforcement and Compliance Branch

Charles Wakild, Raleigh Regional Supervisor
Surface Water Protection Section
Division of Water Quality
North Carolina Department of Environment & Natural Resources

Progress Energy Carolinas, Inc.
P.O. Box 1551
Raleigh, NC 27602



Information Required by 40 CFR § 112.4(a)

On April 15, 2007, a single discharge of approximately 16,000 U.S. gallons of mineral oil occurred from a transformer at a transmission substation facility located in Knightdale, North Carolina, owned and operated by Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc. (PEC). The oil first entered a drainage ditch south of the substation which connects with an unnamed tributary which flows into Mark's Creek (N.C. Stream Index Number 27-38). In accordance with requirements found at 40 CFR § 112.4, PEC is submitting additional information regarding this discharge to US EPA Region 4.

(1) Name of the Facility

Wake 500 kV Transmission Substation

(2) Respondent's Name

Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.

Primary Contact:

Donald R. Ennis, Manager
Environmental Permitting & Compliance
Progress Energy Carolinas
TPP 16
100 E. Davie Street
Raleigh, North Carolina 27601
Business Telephone: (919) 546-7323

(3) Location of the Facility

5201 Knightdale Eagle Rock Road
Knightdale, North Carolina 27545
Wake County

Latitude: 35.781800 Longitude: -78.4523000

Directions: From Raleigh, N.C., take Highway 64 East just past East Point Corporation to Marks Creek Rd. which is before the 500 kV line crossing. Turn right onto Marks Creek Rd. and go to stop sign. Turn left onto Knightdale Eagle Rock Rd. Go 1 mile and turn right onto gravel road entrance to substation.

(4) Maximum storage or handling capacity of the facility and normal daily throughput

The facility is a transmission substation where the total capacity of the electrical equipment in the station is 196,800 gallons. The single largest container is a transmission transformer with a capacity of 19,535 gallons. All oil containers in the substation meet the definition of oil-filled operational equipment as stated in 40 CFR § 112.2 and include transformers, circuit breakers, switches and "other systems containing oil solely to enable operation of the device."

(5) *Corrective action and countermeasures taken, including a description of equipment repairs and replacements.*

Response Activities on April 15, 2007 (Note: All times given are approximate)

0830 – 0900 hours – Substation first response personnel arrived on site and installed booms to contain visible oil north and east of the transformer. Storm drains were protected in accordance with the Spill Prevention, Control and Countermeasures Plan. Internal notifications were made including a call to George Booth, Transmission Lead Environmental Specialist. At this point, the oil was believed to be contained within the substation in the stone bed under the transformer bank.

0930 hours - George Booth made an initial call to A&D Environmental, Progress Energy Carolinas environmental response contractor. (Address and Telephone Number for A&D Environmental: P.O. Box 484, High Point, North Carolina, Telephone (336) 434-7750.)

1040 hours – George Booth arrived on site and from this point forward served as primary Progress Energy Carolinas response coordinator.

1200 hours – Notification was made by George Booth to the North Carolina After Hours Emergency Number (1-800-858-0368 or Raleigh (919) 733-3942)). Jimmy H. Ray, N.C. Department of Crime Control and Public Safety (CC&PS), Division of Emergency Management ((919) 733-3942), received the initial call and relayed the information to N.C. Division of Water Quality staff member, David (Matt) Matthews. Mr. Booth reported that approximately 17,000 gallons of oil was released from the transformer and that it was all believed to be contained on-site in the stone bed beneath the transformer.

1200 – 1400 hours – Periodic deluges of heavy rain occurred during a storm that lasted much of the day. During the rain event period from 1200 to 1400 hours, checks were made to ensure protective measures put into place earlier in the day continued to be effective. Following the period of heavy rain which ended at approximately 1400 hours, Progress Energy Carolinas Transmission employees walked the perimeter of the site to ensure all incident-related issues had been identified and addressed. During this inspection, mineral oil was discovered draining from a pipe outside the substation fence on the south side of the substation. This discharge area sloped down to an unnamed tributary that flowed from west to east, south of the substation (Attachment A-1). Progress Energy Carolinas Transmission employees placed booms across the unnamed tributary and placed a temporary plug in the pipe from which the oil was draining.

1330 hours – David (Matt) Matthews, Environmental Supervisor, Point Source Branch, Surface Water Protection Section, Division of Water Quality, NCDENR, called as a result of the notification he received from Jimmy Ray (CC&PS). Additionally, Mr. Matthews reported the discharge to Wake County Environmental Services.

1500 – 1630 hours – A&D Environmental arrived on site and deployed a vacuum truck where the unnamed tributary crossed under US Highway 264 (Attachment A-2). Booms were placed across the unnamed tributary and a pumping station was established and pumping of oil from the surface of the water was initiated.

1630 hours – Long-term plug was placed in the pipe draining oil from the substation.

1715 hours – Follow-up notification was made to Matt Mathews, NCDWQ to report the discharge to unnamed tributary and some portion of Mark's Creek.

1630 -1730 hours – The response coordinating team provided information on the discharge to the offsite coordinating manager, Mr. Don Ennis. Mr. Ennis gathered additional information on site drainage patterns and downstream water bodies and then made notification to the National Response Center (NRC Incident Report 832291).

1730 hours - Pumping at the station established at US Hwy 264 continued throughout the remainder of the day and night.

Response Activities on April 16, 2007

Progress Energy Carolinas and contract crews continued the mitigation and recovery efforts throughout the day. One crew placed a series of booms across Mark's Creek swamp in the vicinity of Amber Acres Subdivision to ensure no oil could migrate south of that location (Attachment A-3). Another crew installed soft and containment booms at the headwaters of Lake Myra to provide additional protection for the lake (Attachment A-4). Permanent over and under weirs were established on the west side of the US Hwy 264 (Attachment A-5) and at the 500 KV right-of-way south of the substation. Additional personnel worked to establish access through a heavily wooded area to the tributary downstream of the substation (Attachment A-6). Oil-soaked booms and pads were recovered and replaced from those areas where they had been placed on April 15, 2007. Monitoring of the pipe plug continued. Significant effort was directed at establishing access to the area between US Hwy 264 and the Amber Acres Subdivision. Pumping at the newly established weir at US Hwy 264 continued.

April 17, 2007 through May 18, 2007

Free product recovery and impacted soil removal (from the substation) (Attachments A-7 and A-8) continued on a 7 day/week basis. Efforts to further segment the affected areas included the placement of booms in four additional locations. Where possible, product recovery methods consisted of pumping oil from in front of weirs and booms. For the majority of the area downstream of US Hwy 264, due to limited access, recovery methods consisted of manual placement and recovery of pads and booms (Attachments A-9 and A-10).

As of May 31, 2007, approximately 10,600 gallons of oil had been recovered from the site. Due to volatilization and emulsification, it is believed that essentially all recoverable oil has been removed.

Locations of containment system components including weirs, pumping stations, and booms, are shown on Attachment A-11.

Daily cleanup and free product recovery efforts were completed as of Friday, May 18, 2007. Containment and absorbent booms remain in place in critical locations, and routine monitoring and replacement of booms and pads, as necessary, continue as of the

date of this report and will continue until such time as the lead agency, Wake County Environmental Services, deems the cleanup complete.

Total Response Costs

As of May 31, 2007, total response costs for labor, materials and disposal were approximately \$370,500 for external contractors (Note, these costs do not include internal costs for labor and materials).

Regulatory review and inspections on April 16, 2007:

Jeffrey Crowley, Federal On-Scene Coordinator, Superfund Division, Emergency Response & Removal Branch, USEPA Region IV visited the site on April 16, 2007. Mr. Crowley was shown impacted areas and observed containment, mitigation and recovery efforts that were underway by Progress Energy Carolinas employees and A&D Environmental contractors. Eric Green, Wake County Environmental Services, and Ron Boone, N.C. Division of Water Quality also visited the site and were also shown the substation and surrounding area so they could assess the impacts and response. Mr. Crowley, Mr. Boone and Mr. Green discussed lead agency responsibility for further oversight. The EPA representative deferred to the state or county agency. Under a Memorandum of Understanding between Wake County and the N.C. Division of Water Quality, Wake County assumed continued oversight until the response is complete. While at the site, Jeffrey Crowley also conducted an SPCC inspection at the substation. The Progress Energy Carolinas representatives who served as primary contacts for the regulatory agencies on site were Don Ennis, Manager, Environmental Permitting & Compliance, and Mike McDowell, Sr. Environmental Specialist, Environmental Permitting & Compliance.

Equipment Repair and Replacement

All oil was removed from the failed transformer which will remain in the substation until an engineering analysis of the fault is completed. Future plans are to replace the failed transformer with a new transformer. The underground pipe, which allowed for the release of oil, was permanently plugged.

(6) *Description of the facility, including maps, flow diagrams, and topographical maps as necessary:*

The facility is a 500 kV transmission substation, energized and put into service in May 1972. The substation contains oil-filled electrical equipment with mineral oil as a dielectric fluid. As noted previously, the total capacity at the facility is 196,800 gallons. The approximate extent of the oil spill is shown in Attachment A-12 and an aerial view of the substation is shown in Attachment A-1.

(7) *Cause of the discharge, including a failure analysis of the system or subsystem in which the failure occurred.*

A Progress Energy Carolinas transmission substation transformer suffered a catastrophic failure at approximately 0800 hours on April 15, 2007 (Attachment A-13). Based on a relay signal received at the control center, Progress Energy Carolinas substation

maintenance personnel were dispatched to the site and arrived on the scene at 0830 hours. They observed that the transformer tank was compromised on the top and along the sides, allowing oil to exit the transformer (Attachment A-13). Additional Progress Energy Carolinas maintenance personnel were summoned to the site and began to boom off visible oil, the majority of which was located north and east of the transformer. The discharge to water occurred when oil entered an underground pipe that was not identified on the facility diagram included with the facility's Spill Prevention, Control and Countermeasure Plan. This underground pipe allowed oil to leave the site on the south side of the substation approximately 550 feet from the failed transformer (Attachment A-1).

(8) *Additional preventive measures taken or contemplated to minimize the possibility of recurrence.*

The underground pipe in the Wake 500 KV substation where the discharge occurred was permanently plugged with a device specifically designed to allow for manual release of uncontaminated storm water. The stone bed (sump) beneath the transformer bank contains sufficient storage volume to retain the oil in the event of another transformer failure. Remedial actions are in progress for similarly designed facilities at Progress Energy Carolinas.

(9) *Such other information as the Regional Administrator may reasonably require pertinent to the Plan or discharge.*

In correspondence dated June 8, 2007, Progress Energy Carolinas also responded to a request for information from the US EPA Region 4 under Sections 308 and 311 of the Clean Water Act. This correspondence was directed from PEC to Mel Rechtman, Enforcement & Compliance Section, RCRA & OPA Enforcement & Compliance Branch.

Names, Addresses, Titles and Telephone Numbers for Federal, State and Local officials who witnessed mitigation activities:

Jeffrey J. Crowley, Federal On-Scene Coordinator
Superfund Division
EPA Region IV
Emergency Response and Removal Branch
61 Forsyth Street, SW
Atlanta, GA 30303 Telephone: (404) 562-8773

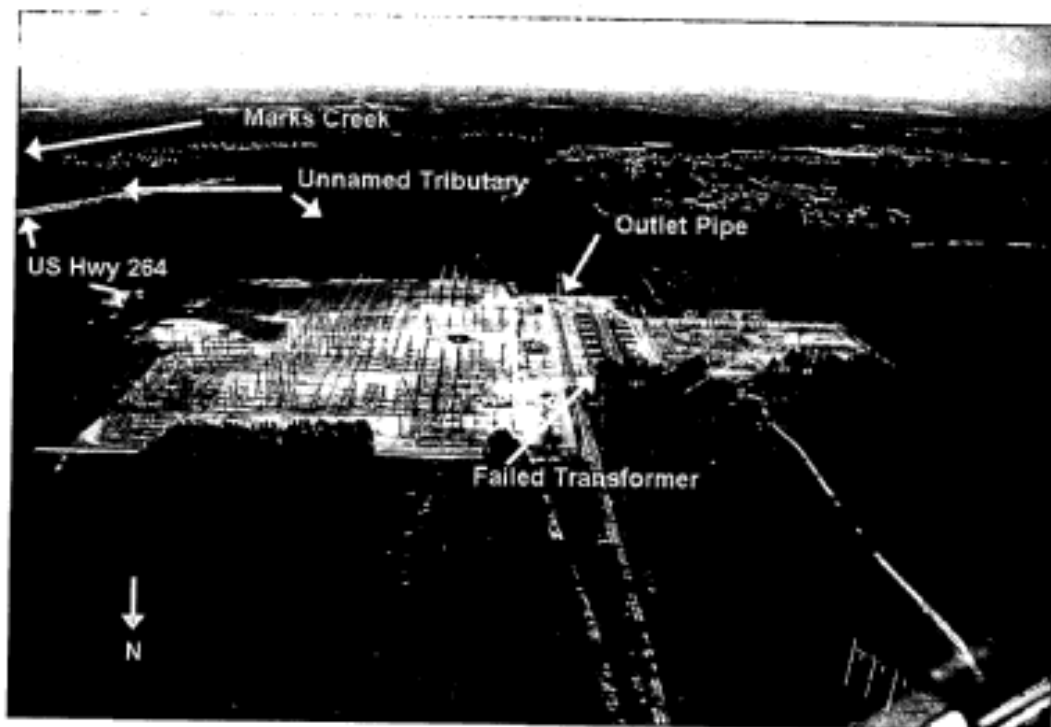
Eric Greene, Environmental Health Specialist
Wake County Environmental Services
Water Quality
Waverly F. Akins Wake County Office Building
Raleigh, N.C. 27602 Telephone: (919) 795-3144

Ron Boone, Environmental Technician
N.C. Department of Environment & Natural Resources
Surface Water Protection Section
Division of Water Quality
Raleigh Regional Office
3800 Barrett Drive
Raleigh, N.C. 27609 Telephone: (919) 791-4200

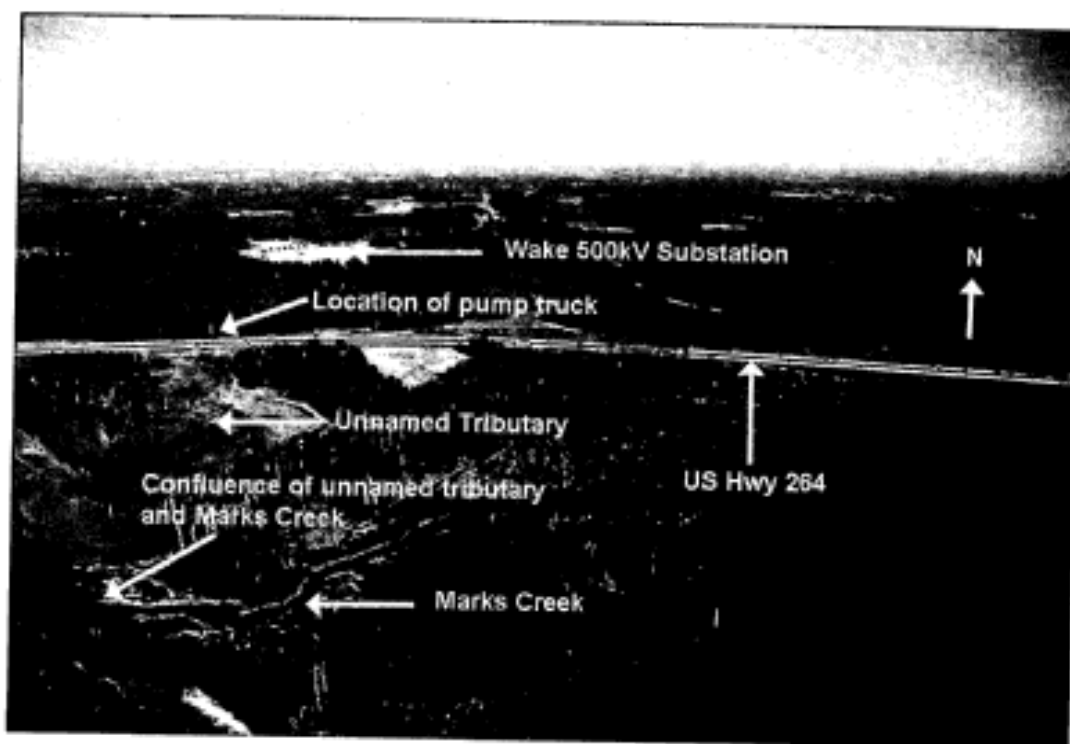
Judy Garrett, Environmental Chemist
N.C. Department of Environment & Natural Resources
Surface Water Protection Section
Division of Water Quality
Raleigh Regional Office
3800 Barrett Drive
Raleigh, N.C. 27609 Telephone: (919) 791-4200

Randy W. Griffin, Jr., Natural Environment Engineering Supervisor
N.C. Department of Transportation
Project Development & Environmental Analysis Branch
Environmental Unit – Office of Natural Environment
1598 Mail Service Center
Raleigh, NC 27699-1598 Telephone: (919) 715-1425

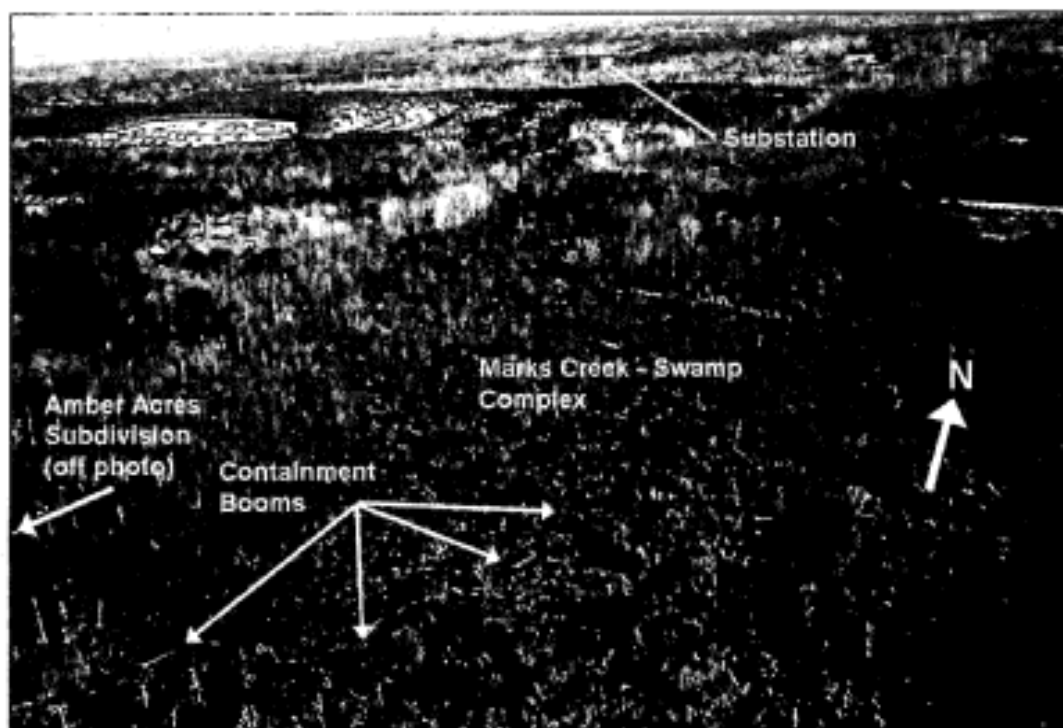
Byron G. Moore, Natural Environment Engineer
N.C. Department of Transportation
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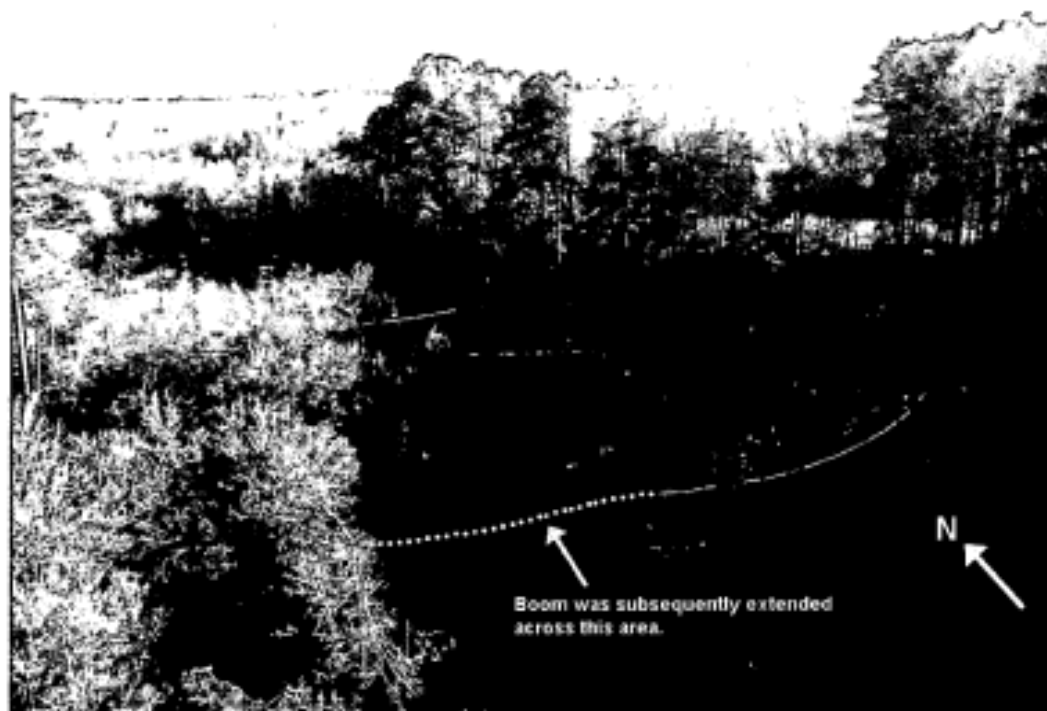
Attachment A-1. Wake 500kV Substation, showing general layout of facilities and natural features. [Note: Surface water flow direction is generally to the southeast.]



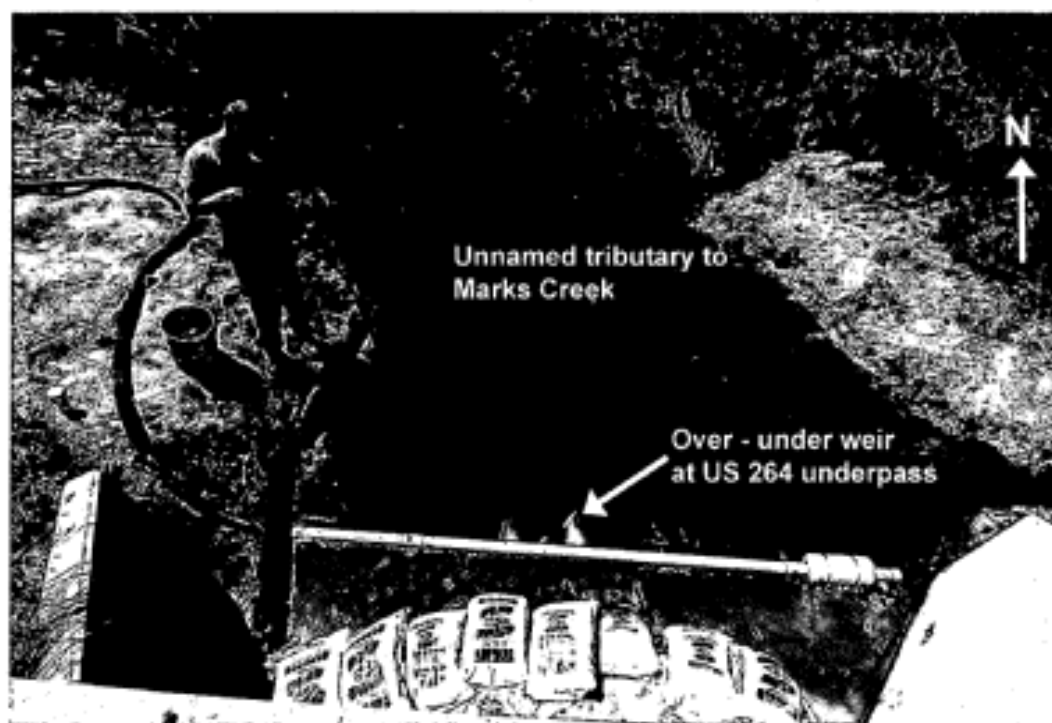
Attachment A-2. General site features, including initial location of pumping truck.



Attachment A-3. Containment booms in Marks Creek in the vicinity of Amber Acres subdivision.



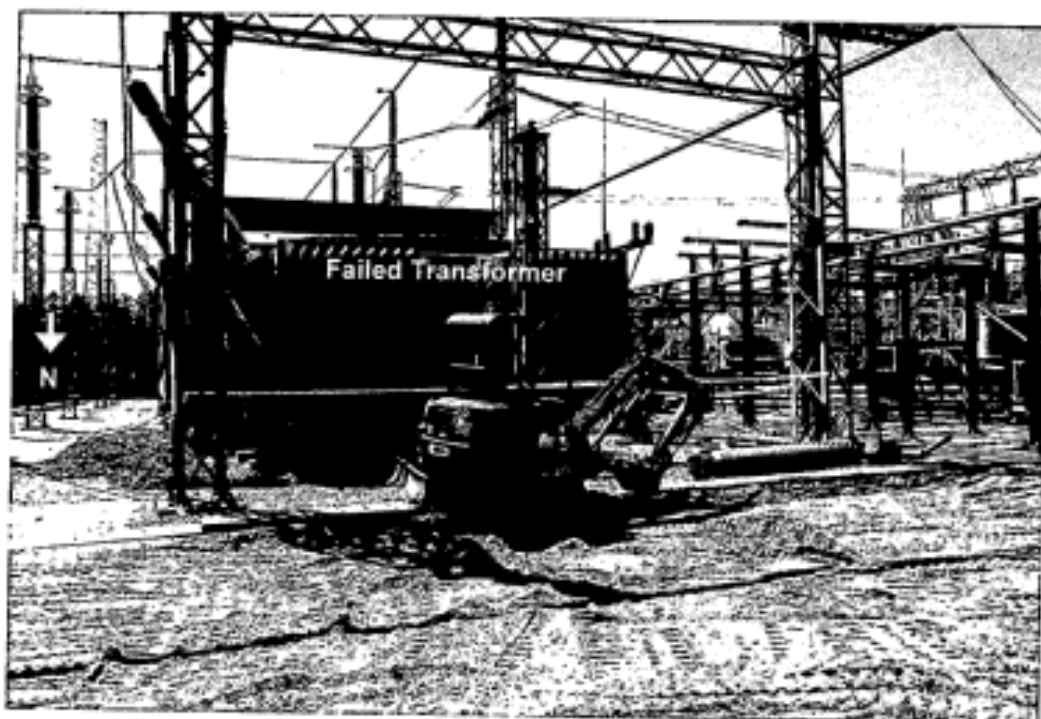
Attachment A-4. Containment booms installed on Marks Creek at the headwaters of Lake Myra.



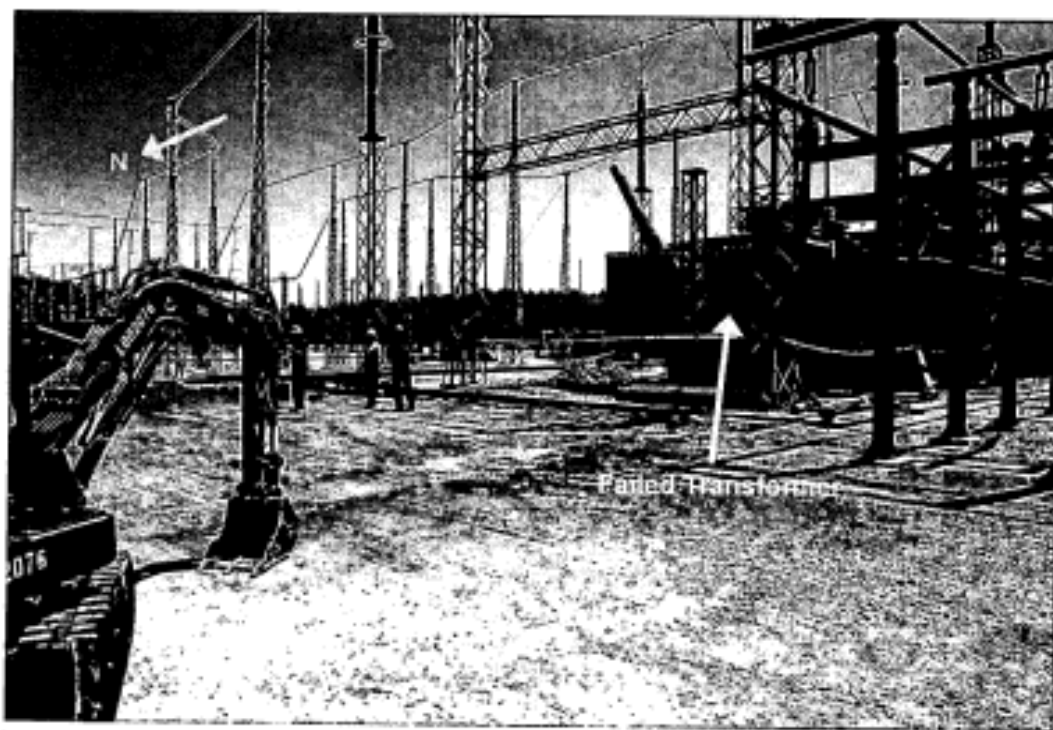
Attachment A-5. Over-under weir installed at junction of unnamed tributary to Marks Creek and US Highway 264.



Attachment A-6. Representative riparian vegetation, showing access difficulty, on portions of the unnamed tributary to Marks Creek.



Attachment A-7. Failed transformer in Wake 500kV Substation, and initial soil cleanup.



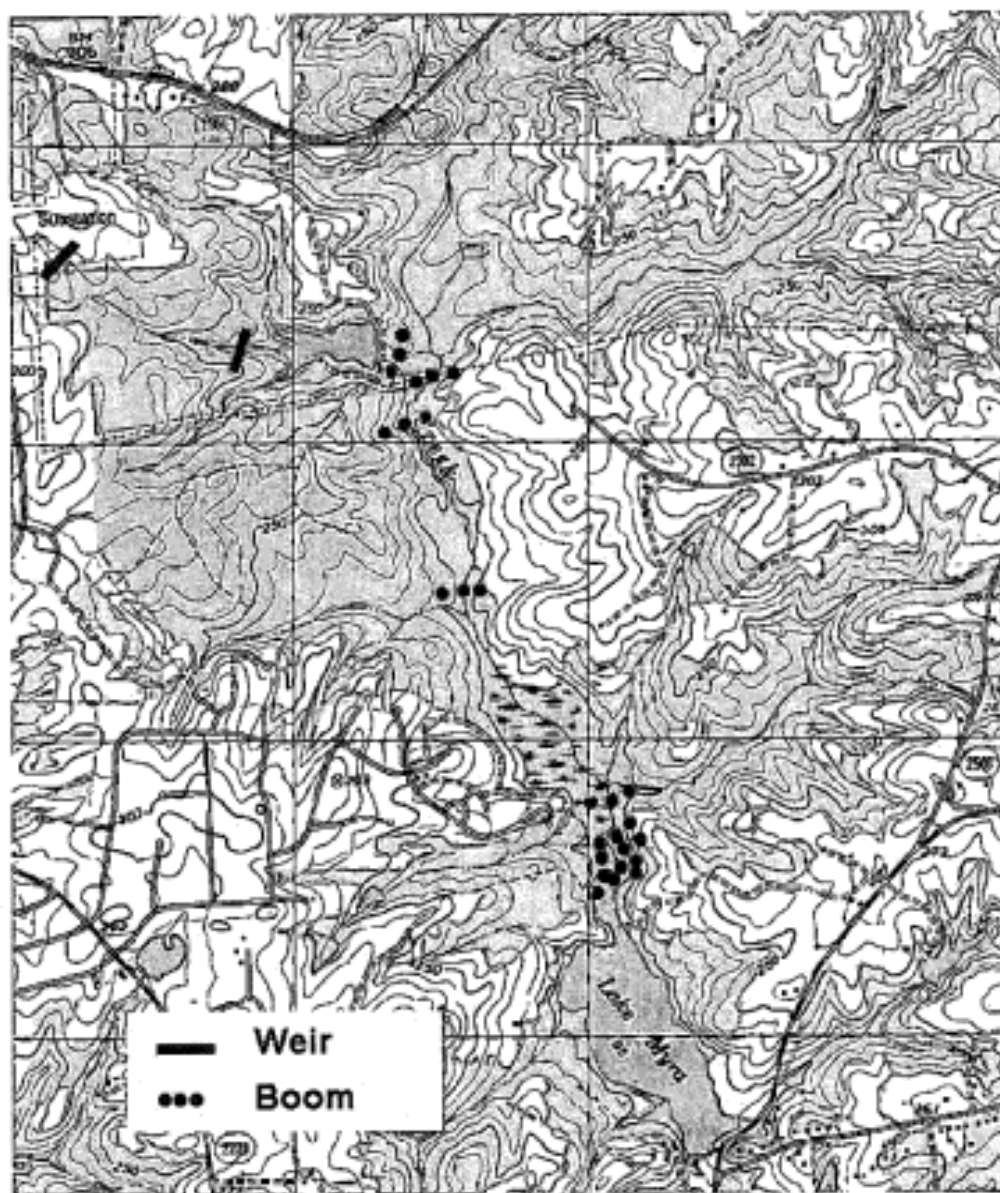
Attachment A-8. Failed transformer in Wake 500kV Substation, and initial soil cleanup.



Attachment A-9. Personnel placing absorbent pads and booms in unnamed tributary to Marks Creek.



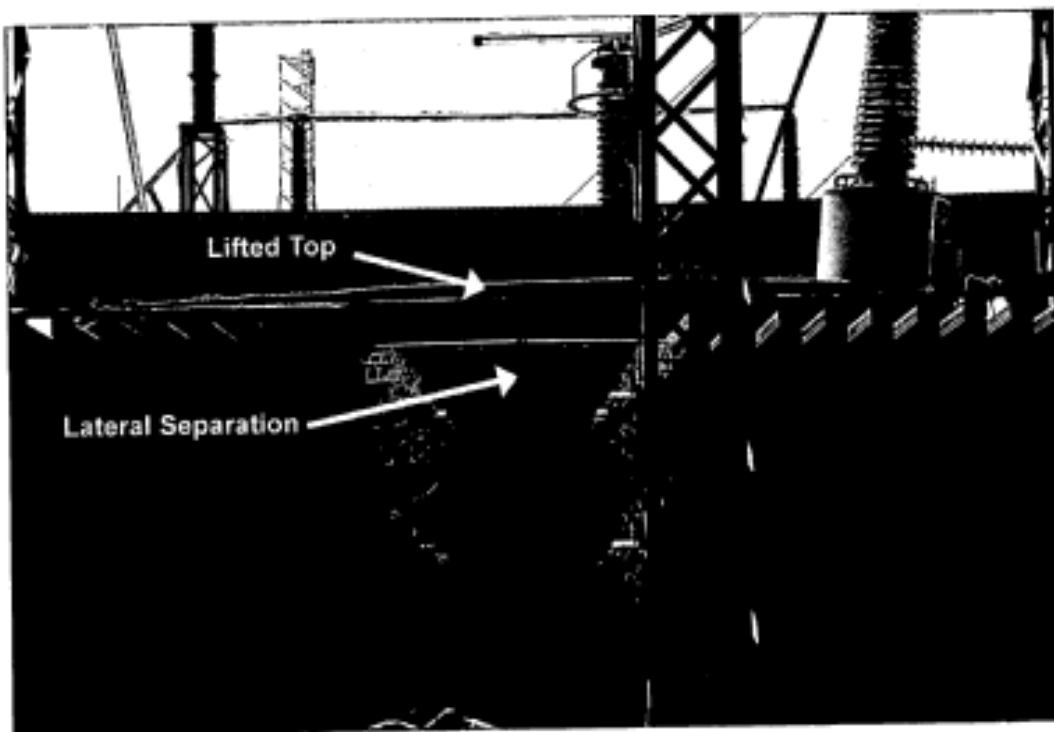
Attachment A-10. Absorbent pads and booms in place on unnamed tributary of Marks Creek.



Attachment A-11. Spill containment system at Wake 500kV Substation (Knightdale Quadrangle, North Carolina, Wake County, USGS, 2002).



Attachment A-12. Topographic map showing approximate extent of Wake 500kV substation oil spill (Knightdale Quadrangle, North Carolina, Wake County, USGS, 2002).



Attachment 13. Close-up of Wake 500kV Substation transformer failure.